

What is claimed is:

1 1. A projector for projecting an image to a
2 projection plate, comprising:

3 a first digital micro-mirror device, with a first
4 micro-mirror disposed thereon;

5 a second digital micro-mirror device, comprising a
6 plurality of second micro-mirrors disposed
7 thereon; and

8 a projection light source, emitting a projection
9 beam toward the first digital micro-mirror
10 device;

11 wherein the first digital micro-mirror device
12 reflects the projection beam from the
13 projection light source to the second digital
14 micro-mirror device, the first micro-mirror is
15 rotated with respect to a vertical axis to
16 adjust a horizontal position where the
17 projection beam is projected on the second
18 digital micro-mirror device, the second digital
19 micro-mirror device reflects the projection
20 beam from the first digital micro-mirror device
21 to the projection plate, and the second micro-
22 mirrors are rotated with respect to an
23 horizontal axis to adjust a vertical position
24 where the projection beam is projected on the
25 projection plate.

1 2. The projector as claimed in claim 1, wherein
2 the first digital micro-mirror device further comprises a
3 first chip, with the first micro-mirror disposed thereon.

1 3. The projector as claimed in claim 1, wherein
2 the rotation range of the first micro-mirror is 10°.

1 4. The projector as claimed in claim 1, wherein
2 the second digital micro-mirror device further comprises
3 a second chip, with the second micro-mirrors disposed
4 thereon.

1 5. The projector as claimed in claim 4, wherein
2 the second micro-mirrors are arranged on the second chip
3 along a horizontal axis.

1 6. The projector as claimed in claim 1, wherein
2 the rotation range of the second micro-mirror is 10°.

1 7. The projector as claimed in claim 1, wherein
2 the projection light source is a laser.

1 8. The projector as claimed in claim 7, wherein
2 the power of the laser is less than 0.5w.

1 9. The projector as claimed in claim 1, wherein
2 the projection light source comprises a first color light
3 source, a second color light source, a third color light
4 source and a prism assembly, the first color light source
5 emits a first color beam, the second color light source
6 emits a second color beam, the third color light source
7 emits a third color beam, and the prism assembly combines

8 the first, second, and third color beam into the
9 projection beam.

1 10. The projector as claimed in claim 9, wherein
2 the first color light source, the second color light
3 source, and the third color light source are disposed on
4 the second digital micro-mirror device.

1 11. The projector as claimed in claim 10, wherein
2 the prism assembly is disposed on the second digital
3 micro-mirror device.

1 12. The projector as claimed in claim 9, wherein
2 the projection light source further comprises a first
3 reflector and a second reflector, with the first
4 reflector directing the first color beam to the prism
5 assembly.

1 13. The projector as claimed in claim 9, wherein
2 the first color beam is a red beam, the second color beam
3 is a green beam, and the third color beam is a blue beam.

1 14. The projector as claimed in claim 1, further
2 comprising a controller, connecting with the projection
3 light source, the first digital micro-mirror device and
4 the second digital micro-mirror device to control the
5 switch of the projection light source and orientations of
6 the first digital micro-mirror device and the second
7 digital micro-mirror device.

1 15. The projector as claimed in claim 1, wherein
2 the projection light source is disposed on the second
3 digital micro-mirror device.

1 16. The projector as claimed in claim 1, wherein
2 the first micro-mirror device, the second micro-mirror
3 device and the projection light source are packaged into
4 a single IC device by IC package process.

1 17. The projector as claimed in claim 1, wherein
2 the first digital micro-mirror device further comprises
3 an opening, through which the projection beam reflected
4 from the second digital micro-mirror device is projected
5 on the projection plate.

1 18. The projector as claimed in claim 1, wherein
2 the projector is applied in a portable electronic
3 apparatus.